U.S. Fish and Wildlife Service
Biological Opinion on
Federal Columbia River Power System Operations
December 20, 2000

The Fish and Wildlife Service developed its biological opinion as part of consultations with the U.S. Army Corps of Engineers and the Bureau of Reclamation, which operate the Federal dams, and the Bonneville Power Administration, which sells the electricity generated at the dams. The dams included in the Service's biological opinion are: Bonneville, The Dalles, John Day and McNary dams (Lower Columbia River facilities); Ice Harbor, Lower Monumental, Little Goose, Lower Granite and Dworshak dams (Lower Snake River and Clearwater facilities); Grand Coulee, Albeni Falls, Libby, Hungry Horse, and Chief Joseph dams and Banks Lake Pump Storage (Upper Columbia River facilities). These projects are located in Oregon, Washington, Idaho, and Montana.

The proposed action analyzed by the biological opinion is the operation and maintenance of these projects which comprise the Federal Columbia River Power System. At issue are the effects of operating the Federal Columbia River Power System (FCRPS) on the endangered Kootenai River white sturgeon (sturgeon), and threatened bull trout.

The Service's opinion concludes that the proposed action will jeopardize the continued existence of the Kootenai River white sturgeon but will not jeopardize the continued existence of bull trout.
The Service has worked with the action agencies to develop a comprehensive list of activities known as reasonable and prudent alternatives and conservation measures to avoid jeopardy and minimize impacts to the species.

The Service worked closely with the action agencies and the National Marine Fisheries Service (NMFS) to complete this consultation and several coordination meetings were held between representatives of the action agencies, the Service, and NMFS. We shared a preliminary draft biological opinion with these agencies in May 2000. Comments on the preliminary draft opinion were received in June 2000. A revised draft was distributed to action agencies and the affected states and Indian Tribes on July 27, 2000 for review and comment and many of the comments received have been incorporated into the final biological opinion.

Impacts to bull trout and Kootenai River white sturgeon occur mostly in the upper reaches of the basin, hence, recommended changes in operations in the biological opinion to minimize adverse effects focus on the Upper Columbia River FCRPS dams (i.e., Hungry Horse, Libby and Albeni Falls dams). The Service and the action agencies reached agreement on changes in operations that will minimize the adverse effects of those facilities on bull trout. For example, we reached agreement on the need for minimum flows and summer and winter ramping rates at Libby and Hungry Horse dams. The opinion also includes implementation of a modified flood control operation (VAR Q) at Hungry Horse Dam that

will provide more water for listed resident fish and salmon. Operations at Albeni Falls Dam to benefit kokanee salmon, a key food source for bull trout in Lake Pend Oreille, are also addressed in the opinion. With regard to Kootenai River white sturgeon, requirements in the biological opinion focus on operations of Libby Dam to provide late spring flows to help "trigger" spawning, and to provide for rearing habitat for the fish. Implementation of VAR Q at Libby Dam**,** which is a reasonable and prudent alternative, provides additional flows that are critical for sturgeon.

Bull trout occur in the main stem Columbia and lower Snake rivers but their use of these areas is not well known. Therefore, the primary requirements of the biological opinion for facilities in these areas are to:1) require monitoring to better determine presence of bull trout; 2) ensure that upstream and downstream passage for bull trout is not impeded; 3) determine the effect of flow fluctuations on stranding or entrapment of bull trout; and 4) minimize uncontrolled spill and the effects of total dissolved gas on the species.

Coordination between NMFS and the Service has been ongoing during the preparation of the draft biological opinions. Both agencies have addressed issues where conflict might arise and collaborated on solutions to meet both the needs of the listed salmon and steelhead and the bull trout and sturgeon. Specifically, NMFS and the Service have agreed to normal water year operations (ramping rates and minimum flows) at Hungry Horse and Libby dams that will benefit all species and implementation of modified flood control operations at both dams to store additional water for resident fish and salmon. In low water years, the agencies have agreed to work out details of operation through the Technical Management Team (TMT) process to balance the needs of listed species.

SUMMARY POINTS/INDEX TO
U.S. FISH AND WILDLIFE SERVICE
BIOLOGICAL OPINION ON
FEDERAL COLUMBIA RIVER POWER SYSTEM OPERATIONS

Species addressed:

Bull Trout (listed threatened)

Kootenai River White Sturgeon (listed endangered)

Development coordinated with National Marine Fisheries Service (NMFS), to eliminate conflicts between requirements for Fish and Wildlife Service (FWS) and NMFS listed species (salmon and steelhead).

Facilities addressed

Lower Columbia River facilities

Bonneville, The Dalles, John Day, McNary Dams

Lower Snake River/Clearwater River facilities

Ice Harbor, Lower Monumental, Little Goose, Lower Granite, Dworshak Dams

Upper Columbia River facilities

Grand Coulee, Albeni Falls, Libby, Hungry Horse and Chief Joseph Dams, and Banks Lake Pump Storage

Primary issues in the biological opinion are for bull trout and Kootenai River white sturgeon (sturgeon) in the Upper Columbia River Basin, particularly operations of Libby and Hungry Horse facilities. Through the consultation process, the action agencies clarified the proposed action to address many of the issues of concern for bull trout and sturgeon. These measures are included in the proposed action.

Overall Measures to Address Needs of Bull Trout and Sturgeon

- Action agencies will provide annual operating plan (1 and 5 year plans) to describe how actions will be implemented.
- Action agencies describe an approach for dealing with/reporting on emergency operations in response to generation or transmission emergencies.
- Action agencies will provide an annual report describing the frequency and duration of flow changes at Hungry Horse and Libby dams needed to provide voltage stability.
- Action agencies will conduct studies of costs and feasibility of options that will preclude the use of Libby and Hungry Horse dams to ensure voltage and transmission stability.

Operations of Libby Dam

(Section 3, proposed action)

Goal: Increase flow capacity so additional volume can be delivered (while avoiding other impacts to resident fish, and to flood control)

- conduct spill test and spillway evaluation

- consider installation of a flow deflector, based on results of spill test
- determine channel capacity downstream of Libby Dam
- seek funds for installation of an additional turbine
- conduct biological studies to determine effectiveness of additional flow capacity to meet needs of sturgeon and bull trout

Bull Trout

Operations of Libby Dam

(*Section 3, proposed action; section 11.A.1, terms and conditions 1 and 2*)

- Implement modified flood control approach (VARQ)
- Operate to meet minimum flows
- Meet ramping rates and conduct studies to include:
  - maximum change in daily and hourly flows
  - ramping rate (up and down)
- Reduce or minimize "second peak"between flows for sturgeon and anadromous fish

Operations of Hungry Horse Dam

(*Section 3, proposed action; section 11.A.1, term and condition 2*)

- Operate to meet minimum flows
  - sliding scale, based on available flows, at SF and mainstem Flathead River (measured at Columbia Falls)
- Meet ramping rates and conduct studies to include:
  - maximum change in daily and hourly flows
  - ramping rate (up and down)
- Reduce or minimize "second peak"between flows for sturgeon and anadromous fish
- Implement modified flood control approach (VARQ) beginning 10/00

Operations of Albeni Falls Dam

(*section 11.A.1, terms and conditions 3 and 4*)

- Study feasibility of fish passage at Albeni Falls
- Study dissolved gas at Albeni Falls
- Continue to operate Dam for Lake Pend Oreille kokanee study

Kootenai River White Sturgeon Issues

Operations of Libby Dam

(*section 3, proposed action, section 8, reasonable and prudent alternatives*)

Requirements in BO based on Sturgeon Recovery Plan. Focus is on 4 primary issues: increased storage, increased release capacity, flood stage constraints, stocking program

- Implement "tiered" flows; accounting at Libby Dam (vs. Bonners Ferry)
- Provide for greater release capacity at Libby
- Conduct spill test/channel capacity study (follow state water quality standards)
- Evaluate load following effects on levees

curtail load following to limit degradation of levees
- Consider establishment of rocky substrate
- Implement modified flood control approach (VARQ)
- Evaluate flood levels and public safety concerns
- Seek means to restore levees to 1770 feet mean sea level (msl) at Bonners Ferry
in the interim, do not exceed 1764 feet msl
- Conduct groundwater seepage study
- Improve volume forecast
- Continue work/funding for Kootenai Tribe efforts